

**Phd position in the Department of Microbiology
at Nicolaus Copernicus University (NCU) in Toruń, Poland**
within Horizon Europe Marie Skłodowska-Curie Doctoral Networks (MSCA DN)
HotBio project

PhD position at NCU in Toruń

We are looking for one PhD candidate with expertise in study on actinomycetes from harsh and unexplored environments

Description of position

A 3-year PhD Studentship is available for an independent and highly motivated individual to work in the Departments of Microbiology at Nicolaus Copernicus University in Toruń (<https://www.bio.umk.pl/en/departament-of-microbiology/>).

This position is associated to the **Doctoral Network HOTBIO** funded by the European Commission under the Horizon Europe Program. The successful candidate will join a multidisciplinary research team to develop a PhD project focused on **Untapped potential of actinobacteria from aquatic environments as a source of novel bioactive compounds**.

The candidate will perform:

- Isolation of actinomycetes from marine environments and saline lakes using standard and innovative selective isolation procedures to promote the isolation of targeted and suppress unwanted microorganisms
- Dereplication and screening of actinomycetes for putative novel taxa and for natural product biosynthesis using bioprospecting-based procedures, molecular studies (including genome sequencing and genome mining) and bioinformatic tools.
- Selection of the most promising candidates in biosynthesis of specialized metabolites for chemical extraction of metabolites, dereplication and characterization of promising compounds that will be performed during 7 months mandatory secondments at Aberdeen University, UK (secondment 1) and UiT the Arctic University of Norway (Tromsø, Norway; secondment 2) as well as one month training at spin-off biotechnological company.

Who can apply?

Applicants must be doctoral candidates, i.e. not already in possession of a doctoral degree at the date of the recruitment, and they must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting beneficiary for more than 12 months in the 36 months immediately before their date of recruitment.

The applicant must be in the first four years of their research career (measured from the date they obtained a degree that allows them to enrol in a PhD program).

Position requirements for candidates:

- A Master degree in Life Sciences, preferably in Biology, Biotechnology or similar
- Experience in microbiology, especially in selective isolation of microorganisms, mainly actinomycetes, molecular studies – identification and taxonomy of bacteria, microorganisms cultivation and screening for bioactivity of bacteria using culture-based bioprospecting strategy.
- Knowledge in basic bioinformatic tools used in bacterial taxonomy studies and genome analyses

- Basic knowledge in HPLC, LC-MS/MS, NMR techniques.
- Ability to work independently on its own initiative and in a team environment.
- Excellent oral and written communication skills in English are expected for an effective interaction with our multidisciplinary research team and other members of the Doctoral Network.
- Experience in paper writing is welcome.

Applicants meeting these requirements should send to the following email address: hotbio@umk.pl

- A complete CV (personal details, academic/education history, research experience, experimental skills, publications, other).
- Names and contact information of at least two Scientists for reference letters
- A motivation letter – max 2 pages (Provide authorization to handle personal data according to EU General Data Protection Regulation).

Applications must be submitted as one PDF file containing all materials to be given consideration.

The deadline for applications is 5th February 2023

Shortlisted candidates will be invited for an online interview.

Candidates will be notified of the outcome through the same e-mail address. Start of the project is foreseen on mid-2023.

The selected candidate will be employed for three years at Nicolaus Copernicus University in Toruń, Poland (<https://www.umk.pl>).

- 1) *Living allowance* of €3,400 (country correction coefficient applies) that will be gross **2397 €/ month***
- 2) *Mobility allowance* of €600/ month,
- 3) *Family allowance* (€660)/ month, if applicable.

*Employer costs and other deductions depend on the recruiting organisation will be applied.

We would like to encourage all nationalities to apply. HOTBIO supports balanced gender representation by promoting genuine equal access opportunities throughout the recruitment process.

Horizon Europe MSCA DN HOTBIO

The HOTBIO project (<https://uit.no/project/hotbio>) is a Horizon Europe MSCA Doctoral Network project that aims to train doctoral fellows in the field of marine biology and pharmacology.

HOTBIO is a marine biodiscovery project developing secondary metabolites from marine microorganisms into well-characterised compounds that can be applied in medicine, agriculture or aquaculture. This collaborative action comprises a network of leading institutions and offers a first-class research and training program in an international, multidisciplinary environment.

The consortium will welcome 13 early-stage researchers, who will develop their individual research projects for three years in one of our excellent beneficiary institutions. Within this network, the candidates will be introduced to every stage of the marine biodiscovery pipeline, while their individual research projects will be dedicated to certain steps of this pipeline. High quality training in transferable skills will also be provided by the network. The main research activities of the PhD students will be accompanied by secondments at different sites, as well as meetings, courses and practical workshops specifically crafted for the project. Furthermore, the fellows will be enrolled in local doctoral schools, where they will get additional training and collaboration opportunities.

The goal of this extensive training program is to complement the day-to-day scientific training with the experiences and tools needed to pursue a future career in any sector of science, both inside and outside academia. Students graduating from HOTBIO will be in a unique position to enter a challenging labour market, as they will have received multidisciplinary training at world-leading research groups in academia and industry partners.

Project background

The HOTBIO consortium will train a new generation of researchers to develop marine microbial natural products from the seabed to the bedside. This project expands a conventional marine biodiscovery pipeline by employing cutting edge technology, including computer aided drug design, chemical synthesis of optimised compounds (i.e. medicinal chemistry), target deconvolution and extensive ADMET profiling. This will advance the bioactive microbial secondary metabolites to the later stages of preclinical development.

Just like the field of marine biodiscovery, this consortium is highly multidisciplinary, with experts from the fields of microbiology, chemistry, high throughput screening, genome mining, innovation, commercialization, molecular biology, and computational chemistry. The partners will work synergistically to optimise the learning experience for the candidates.

The consortium is composed of seven European beneficiaries from six different countries (Germany, Spain, Italy, Poland, Belgium and Norway), three partners from Switzerland and the United Kingdom, as well as associated partners from Austria, Ghana and India. The project will be coordinated by UiT - The Arctic University of Norway.

About NCU in Toruń and Department of Microbiology

The Nicolaus Copernicus University in Toruń is one of 10 Polish universities which was granted the status of a research university within the program of the Ministry of Science and Higher Education “Excellence Initiative – Research University”. NCU belongs to YUFE (Young Universities for the Future of Europe) that is one of the 41 consortia selected by the European Commission to build and test the model of the European University - open, non-elitist and integrating various communities, as well as promoting innovation, interdisciplinarity and the highest quality in research and education.

Department of Microbiology is an international crew that carries out several interdisciplinary research project, including ones in an international cooperation. Department of Microbiology at NCU has sufficient infrastructure, including modern and well-equipped laboratories to perform isolation, cultivation and molecular analyses of isolated microorganisms. A large libraries of bioactive strains from different environments have been established for biotechnological purposes. Moreover, dozen novel actinomycete species with high potential for synthesis of bioactive natural products based on genome mining and co-culture analyses have been described.